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TABLE X—CUSUM SAMPLING PLANS  
[Standard sample unit size=200]

AQL	S	T	L	Quality levels	
				Pa= 50%	Pa= 10%
Quality levels expressed as defects per 100 units or percent defective					
0.04 .....	0.3	0.1	0.9	0.3	1.2
0.065 .....	0.2	0.2	0.8	0.4	1.2
0.1 .....	0	0.5	0.5	0.5	1.3
0.15 .....	0.4	0.8	0.8	0.6	1.3
0.25 .....	0.4	0.8	1.6	0.6	1.3
0.4 .....	1	1	2	1.0	2.0
0.65 .....	1	1.8	2.6	1.2	2.1
1.0 .....	1	2.5	3	1.7	2.8
1.5 .....	1	4	3	2.6	4.1
2.5 .....	1	6	4	3.7	5.3
4.0 .....	1	10	4	5.8	7.8
5.0 .....	2	12	5	6.9	9.0
6.5 .....	2	15	6	8.5	10.8
8.5 .....	3	19	8	10.6	13.1
10.0 .....	3	22	9	12.2	14.8
Quality levels expressed as defects per 100 units only					
12.5 .....	4	27	10	14.8	17.7
15.0 .....	3	33	9	17.8	21.0
20.0 .....	4	43	12	23.1	26.6
25.0 .....	5	53	14	28.2	32.1
33.0 .....	5	70	15	36.9	41.3
40.0 .....	6	84	18	44.1	48.8
50.0 .....	6	105	18	54.8	60.1
Quality levels expressed as percent defective only					
12.5 .....	3	27	9	14.7	17.3
15.0 .....	4	32	10	17.3	20.0
20.0 .....	3	43	9	22.8	25.9
25.0 .....	4	53	11	27.9	31.1
33.0 .....	5	69	13	36.1	39.4
40.0 .....	5	83	14	43.1	46.5
50.0 .....	5	103	14	53.1	56.5

[43 FR 10540, Mar. 14, 1978. Redesignated at 46 FR 63203, Dec. 31, 1981]

§ 52.38c Statistical sampling procedures for lot inspection of processed fruits and vegetables by attributes.

(a) *General.* Single sampling plans shall be used as the lot sampling plan for attributes standards under either of the following conditions:

(1) Sampling of the product shall be made during the production period. No grade will be assigned to individual sample units. One grade determination only will be made at the end of the production period for the inspection lot.

(2) Sampling of the product shall be made when the inspection lot is located in a warehouse, truck, railroad car, or other similar conveyance.

(b) *Sample size.* Samples shall be randomly selected from each inspection lot in the exact number of sample units indicated for the lot size in tables XI through XIV as applicable for canned, frozen, dried, or dehydrated fruits and vegetables.

TABLE XI—CANNED OR SIMILARLY PROCESSED FRUITS, VEGETABLES, AND PRODUCTS CONTAINING UNITS OF SUCH SIZE AND CHARACTER AS TO BE READILY SEPARABLE  
[Lot sample size]

Container size group	Lot size (number of containers)			
Group 1: Any type container of a volume not exceeding that of a No. 303 size can.	12,000 or less .....	12,001–39,000	39,001–84,000	84,001–145,000
Group 2: Any type of container of a volume exceeding that of a No. 303 size can but not exceeding that of a No. 3 cylinder size can.	6,000 or less .....	6,001–19,500	19,501–42,000	42,001–72,500
Group 3: Any type of container of a volume exceeding that of a No. 3 cylinder size can, but not exceeding that of a No. 12 size can.	3,000 or less .....	3,001–9,750	9,751–21,000	21,001–36,250
Group 4: Any type of container of a volume exceeding that of a No. 12 size can. Convert to equivalent number of 6-lb. net weight containers and use group 3 size can.				
Lot inspection: Sample size (number of sample units).	6 .....	13	21	29

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**TABLE XII—FROZEN OR SIMILARLY PROCESSED FRUITS, VEGETABLES, AND PRODUCTS CONTAINING UNITS OF SUCH SIZE AND CHARACTER AS TO BE READILY SEPARABLE**  
[Lot sample size]

Container size group	Lot size (number of containers)			
Group 1: Any type of container of 1 lb or less net weight.	9,600 or less ...	9,601–31,200	31,201–67,200	67,201–116,000
Group 2: Any type of container over 1 lb but not over 2½ lb net weight.	4,800 or less ...	4,801–15,600	15,601–33,600	33,601–58,000
Group 3: Any type of container over 2½ lbs. Convert to equivalent number of 2½-lb. containers and use group 2				
Lot inspection: Sample size (number of sample units).	6 .....	13	21	29

**TABLE XIII—CANNED, FROZEN, OR OTHERWISE PROCESSED FRUITS, VEGETABLES, RELATED PRODUCTS OF A COMMINUTED, FLUID OR HOMOGENEOUS STATE**  
[Lot sample size]

Container size group	Lot size (number of containers)			
Group 1: Any type of container of 1 lb or less.	18,000 or less	18,001–58,500	58,501–126,000	126,001–217,000
Group 2: Any type of container exceeding 1 lb. but not exceeding 60 oz.	12,000 or less	12,001–39,000	39,001–84,000	84,001–145,000
Group 3: Any type of container exceeding 60 oz but not exceeding 10 lb.	6,000 or less ...	6,001–19,500	19,501–42,000	42,001–72,500
Group 4: Any type of container exceeding 10 lbs. Convert to equivalent number of 6-lb. containers and use group 3.				
Lot inspection: Sample size (number of sample units).	6 .....	13	21	29

**TABLE XIV—DEHYDRATED (LOW-MOISTURE) FRUITS, AND VEGETABLES**  
[Lot sample size]

Container size group	Lot size (number of containers)			
Group 1: Any type of container of 1 lb or less net weight.	7,200 or less ...	7,201–23,400	23,401–50,400	50,401–87,000
Group 2: Any type of container over 1 lb but not over 6 lb net weight.	2,400 or less ...	2,401–7,800	7,801–16,800	16,801–29,000
Group 3: Any type of container over 6 lbs. Convert to equivalent number of 5-lb. containers and use group 2.				
Lot inspection: Sample size (number of sample units).	6 .....	13	21	29

(c) *Determining compliance.* (1) An inspection lot meets the requirements of a quality grade if the number of defects (or defectives) is equal to or less than the acceptance numbers of all classes of defects.

(2) An inspection lot fails the requirements of a quality grade if the number

of defects (or defectives) exceeds the acceptance number for one or more classes of defects.

(d) *Lot single sampling plans for processed fruits and vegetables.* (1) Tables XV through XIX contain the lot single sampling plans for each of five different standard sample unit sizes. The

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plans within each table are listed according to increasing values of Acceptable Quality Levels (AQL's).

(2) AQL values of 10.0 or less may be expressed either in "defects per hundred units" or in "percent defective units." The same sampling plans are used for both. Separate sampling plans must be used for AQL values greater than 10.0.

(3) A separate lot single sampling plan is chosen for each class of defects (or defectives) by first specifying the desired AQL, the appropriate standard sample unit size, and the number of sample units as specified in § 52.38c (b) of this subpart. The quality levels associated with the Pa=50% and Pa=10% levels are given in the instructional manual.

TABLE XV—LOT SINGLE SAMPLING PLANS  
[Standard sample unit size=6]

	Number of sample units			
	6	13	21	29
Acceptance numbers—quality levels expressed as defects per 100 units or percent defective—AQL				
1.0 .....	1	2	3	4
1.5 .....	1	3	4	5
2.5 .....	3	4	6	8
4.0 .....	4	6	9	11
5.0 .....	4	7	11	14
6.5 .....	5	9	13	17
8.5 .....	6	11	16	21
10.0 .....	7	12	19	24
Quality levels expressed as defects per 100 units only				
12.5 .....	8	15	22	29
15.0 .....	9	17	26	35
20.0 .....	12	22	33	44
25.0 .....	14	27	41	54
33.0 .....	18	34	52	70
40.0 .....	21	40	62	83
50.0 .....	25	49	76	102
65.0 .....	31	62	97	131
85.0 .....	40	80	124	168
100.0 .....	46	92	144	196
150.0 .....	66	135	212	288
250.0 .....	105	218	344	469
Quality levels expressed as percent defective only				
12.5 .....	8	15	22	29
15.0 .....	9	17	25	34
20.0 .....	11	21	33	43
25.0 .....	13	26	39	53
33.0 .....	16	32	50	67
40.0 .....	19	38	59	80
50.0 .....	23	46	72	98

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TABLE XVI—LOT SINGLE SAMPLING PLANS  
[Standard sample unit size=13]

	Number of sample units			
	6	13	21	29
Acceptance numbers—quality levels expressed as defects per 100 units or percent defective—AQL				
0.65 .....	1	3	4	5
1.0 .....	2	4	6	7
1.5 .....	3	5	8	10
2.5 .....	4	8	11	15
4.0 .....	6	11	16	22
5.0 .....	7	13	20	26
6.5 .....	9	17	25	33
8.5 .....	11	21	31	41
10.0 .....	12	24	36	48
Quality levels expressed as defects per 100 units only				
12.5 .....	15	29	44	58
15.0 .....	17	34	51	69
20.0 .....	22	43	67	90
25.0 .....	27	53	82	110
33.0 .....	34	68	106	143
40.0 .....	40	81	126	171
50.0 .....	49	99	156	211
65.0 .....	62	127	199	271
85.0 .....	80	163	257	350
100.0 .....	92	190	300	409
Quality levels expressed as percent defective only				
12.5 .....	15	28	43	58
15.0 .....	17	33	51	68
20.0 .....	21	42	65	88
25.0 .....	26	51	80	108
33.0 .....	32	66	103	139
40.0 .....	38	78	123	166
50.0 .....	46	95	150	204

TABLE XVII—LOT SINGLE SAMPLING PLANS  
[Standard sample unit size=25]

	Number of sample units			
	6	13	21	29
Acceptance numbers—quality levels expressed as defects per 100 units or percent defective—AQL				
0.4 .....	2	3	5	6
0.65 .....	3	5	7	8
1.0 .....	4	6	9	12
1.5 .....	5	9	13	16
2.5 .....	7	13	19	25
4.0 .....	10	19	29	38
5.0 .....	12	23	35	46
6.5 .....	15	29	44	58
8.5 .....	19	36	56	74
10.0 .....	21	42	64	86
Quality levels expressed as defects per 100 units only				
12.5 .....	26	51	79	106
15.0 .....	30	60	93	126
20.0 .....	39	78	122	165
25.0 .....	48	96	150	203
33.0 .....	61	124	195	265
40.0 .....	73	149	234	318
50.0 .....	89	183	289	394
65.0 .....	114	235	372	507

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TABLE XVII—LOT SINGLE SAMPLING PLANS—  
Continued

[Standard sample unit size=25]

	Number of sample units			
	6	13	21	29
Quality levels expressed as percent defective only				
12.5 .....	25	50	78	105
15.0 .....	30	59	92	125
20.0 .....	38	77	120	163
25.0 .....	46	94	148	200
33.0 .....	59	121	191	260
40.0 .....	70	145	228	312
50.0 .....	85	177	281	385

TABLE XVIII—LOT SINGLE SAMPLING PLANS

[Standard sample unit size=50]

	Number of sample units			
	6	13	21	29
Acceptance numbers—quality levels expressed as defects per 100 units or percent defective—AQL				
0.15 .....	1	3	4	5
0.25 .....	2	4	5	7
0.4 .....	3	5	8	10
0.65 .....	4	8	11	15
1.0 .....	6	11	16	21
1.5 .....	8	15	22	29
2.5 .....	12	23	35	46
4.0 .....	18	34	53	70
5.0 .....	21	42	64	86
6.5 .....	27	53	82	110
8.5 .....	34	67	105	142
10.0 .....	39	78	122	165

Quality levels expressed as defects per 100 units only

12.5 .....	48	96	150	203
15.0 .....	56	114	178	242
20.0 .....	73	149	234	318
25.0 .....	89	183	289	394
33.0 .....	115	239	377	514
40.0 .....	138	287	454	620
50.0 .....	170	355	563	769

Quality levels expressed as percent defective only

12.5 .....	47	95	149	202
15.0 .....	55	112	177	240
20.0 .....	71	147	231	315
25.0 .....	87	181	286	390
33.0 .....	112	234	372	508
40.0 .....	134	281	446	611
50.0 .....	164	346	552	756

TABLE XIX—LOT SINGLE SAMPLING PLANS

[Standard sample unit size=100]

	Number of sample units			
	6	13	21	29
Acceptance numbers—quality levels expressed as defects per 100 units or percent defective—AQL				
0.1 .....	2	3	5	6
0.15 .....	3	4	6	8
0.25 .....	4	6	9	12

TABLE XIX—LOT SINGLE SAMPLING PLANS—  
Continued

[Standard sample unit size=100]

	Number of sample units			
	6	13	21	29
0.4 .....	5	9	13	17
0.65 .....	7	13	20	26
1.0 .....	10	19	29	38
1.5 .....	14	27	41	54
2.5 .....	21	42	64	86
4.0 .....	32	64	99	134
5.0 .....	39	78	122	165
6.5 .....	49	99	156	211
8.5 .....	63	128	200	272
10.0 .....	73	149	234	318
12.5 .....	89	183	289	394
15.0 .....	105	218	344	469
20.0 .....	138	287	454	620
25.0 .....	170	355	563	769
33.0 .....	221	463	736	1,008
40.0 .....	266	558	888	1,216
50.0 .....	329	692	1,103	1,513

Quality levels expressed as percent defective only

12.5 .....	88	182	287	392
15.0 .....	104	216	342	467
20.0 .....	136	284	450	615
25.0 .....	167	351	558	763
33.0 .....	217	457	728	999
40.0 .....	260	549	877	1,203
50.0 .....	320	680	1,088	1,494

[43 FR 10542, Mar. 14, 1978. Redesignated at 46 FR 63203, Dec. 31, 1981]

## § 52.39 Issuance of certificate of sampling.

Each inspector and each licensed sampler shall prepare and sign a certificate of sampling to cover the samples drawn by the respective person, except that in-plant inspectors who inspect the samples which they have drawn need not prepare a certificate of sampling. One copy of each certificate of sampling prepared shall be retained by the licensed sampler and the original and all other copies thereof shall be disposed of in accordance with the instructions of the Administrator.

[51 FR 20445, June 5, 1986]

## § 52.40 Identification of lots sampled.

Each lot from which officially drawn samples are selected shall be marked in such manner as may be prescribed by the Administrator, if such lots do not otherwise possess suitable identification.